
بسم الله الرحمن الرحيم

Cast metal Full Crown



Presented by

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Definition of cast metal crown

- **Cast metal crown is a full crown restoration which is cast with dental alloy.**

◆Metal crown materials

- Base metal alloy



- Gold alloy
- Computer aided design and computer aided manufactory (CAD/CAM) metal crown

Indications for full metal crown

. *Restoration* of *badly broken-down teeth*

In teeth that exhibit extensive coronal destruction by caries or trauma.





Restoration of *root-filled teeth*

The complete cast crown is indicated on endodontically treated teeth. Its superior strength compensates for the loss of tooth structure that result from previous restorations, carious lesions, and endodontic access.






As part of *another restoration*

as retainers for bridges and fixed splints. In addition, they may be indicated in conjunction with conventional or precision attachment retained partial dentures.





To alter the shape or size or inclination of teeth

Major changes in the position of teeth can be made only by orthodontic treatment, though minor change s in appearance can be achieved by 'crowns.





To alter the occlusion

Crowns may be used to alter the angulation or occlusal relationships of anterior and posterior teeth as part of an occlusal reconstruction either to solve an occlusal problem or to improve function




Squirrel
created by David op De Beéck
(c) 2001

Contra Indications of full metal crown

. If treatment objectives can be met with a more conservative restoration

. Wherever an intact buccal or lingual wall exists, use of a partial-coverage restoration should be considered

. If less than maximum retention and resistance are needed as in case of a short-span fixed partial denture.

. The complete crown is not indicated. If a high esthetic need exists (e.g., anterior teeth).

Advantages of cast metal crown

. greater retention than partial coverage restoration

. greater resistance form than a partial-coverage restoration on the same tooth

.
The strength of a complete cast crown is superior to that of other restorations

.
allows the operator to modify axial tooth contour, especially when dealing with malaligned teeth
permits easy modification of the occlusion

Disadvantages of cast metal crown

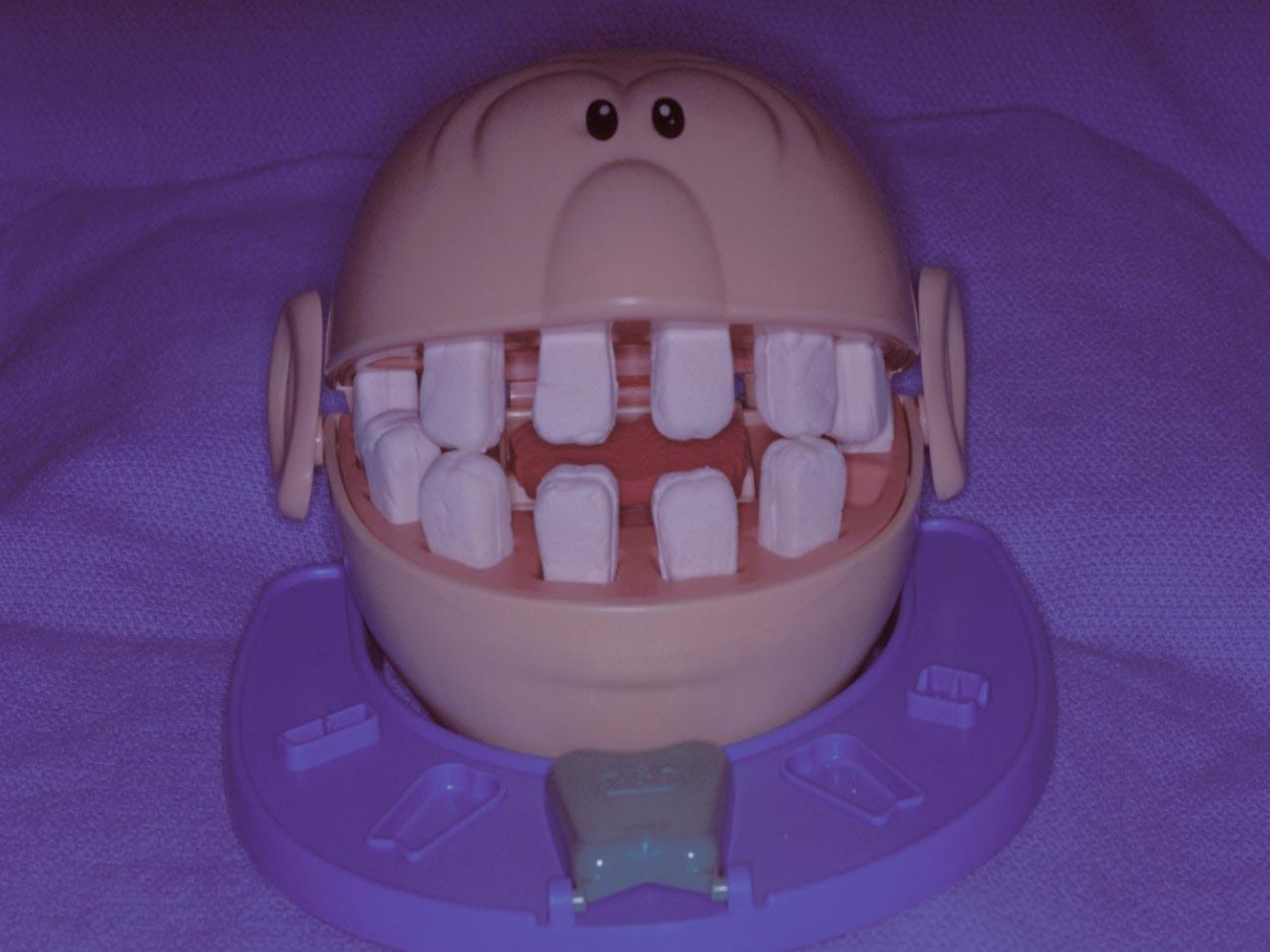
. Removal of tooth structure is extensive

. It is not uncommon to see inflammation of gingival tissues

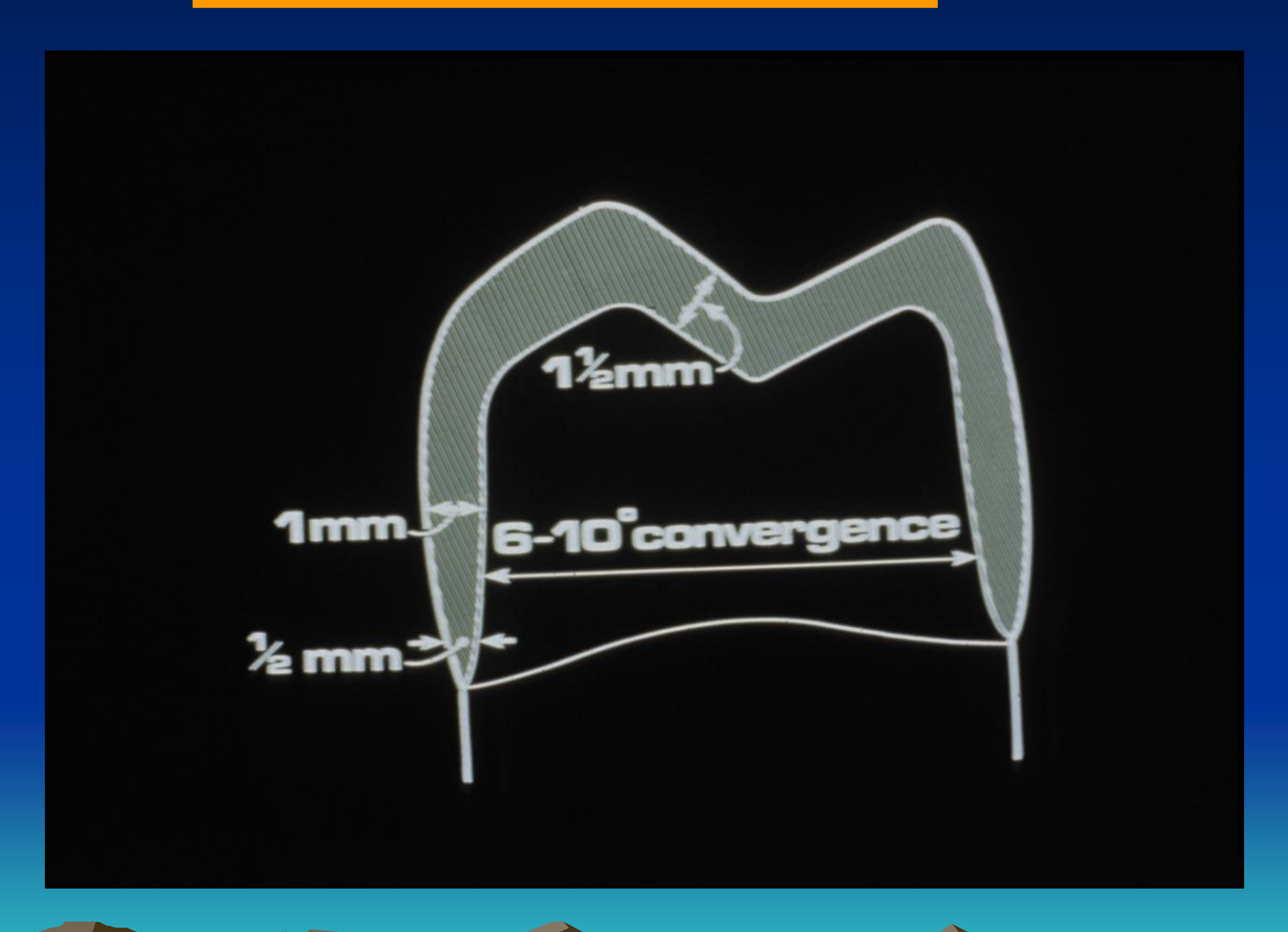
. It is no longer feasible to perform electric vitality

. Testing of an abutment tooth. The conductivity of the metal interferes with the test.

. Patients may object to the display of metal



PREPARATION



Procedure

1. Occlusal reduction
2. Depth-orientation groove
3. Functional cusp bevel
4. B/L wall reduction
5. Proximal reduction
6. Rounding &finishing

Occlusal Reduction

- 1.5 mm clearance in function cusps & 1 mm in non function
- Follow original occlusal planes
- Reduction parallels opposing triangular ridges

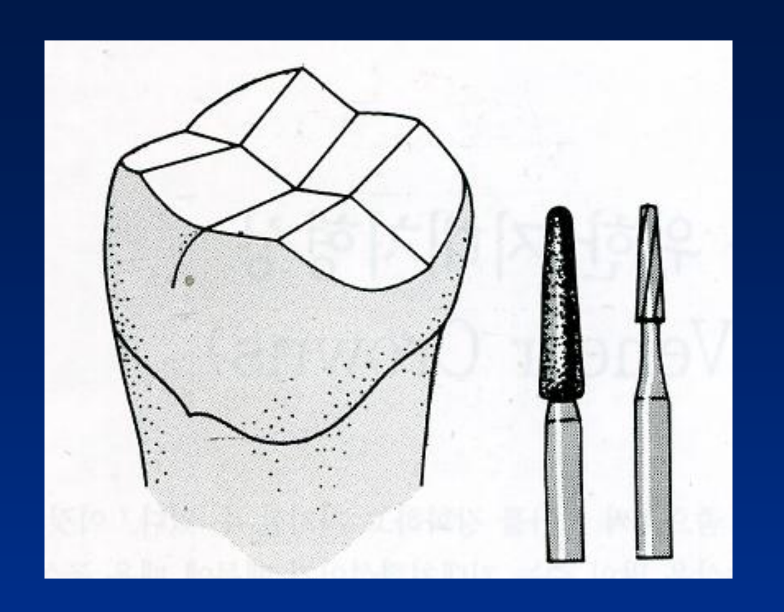





Functional Cusp Bevel

- 1.5 mm clearance
- Parallels opposing triangular ridges





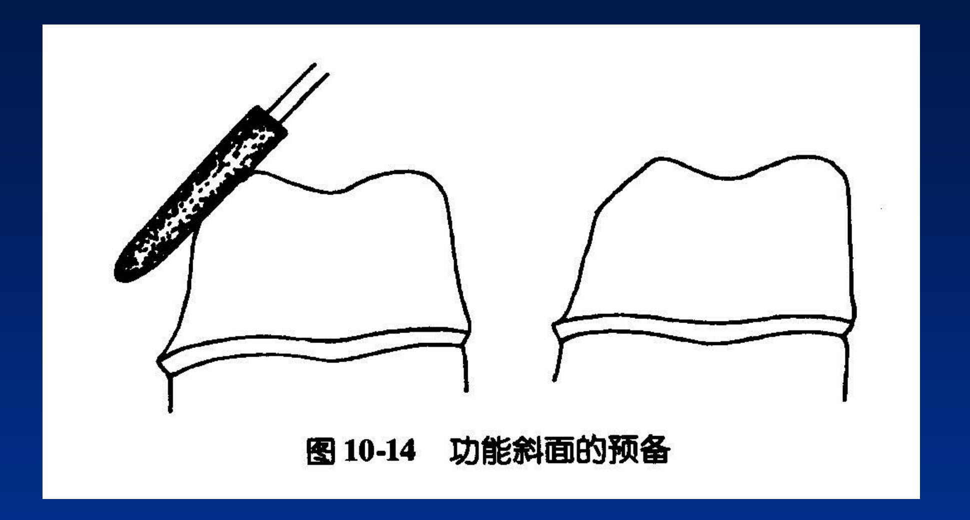
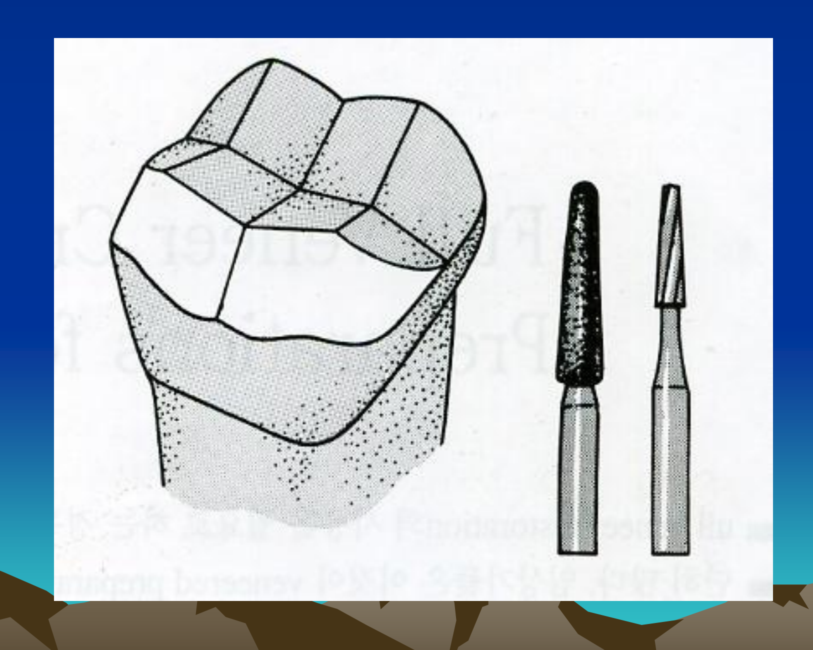
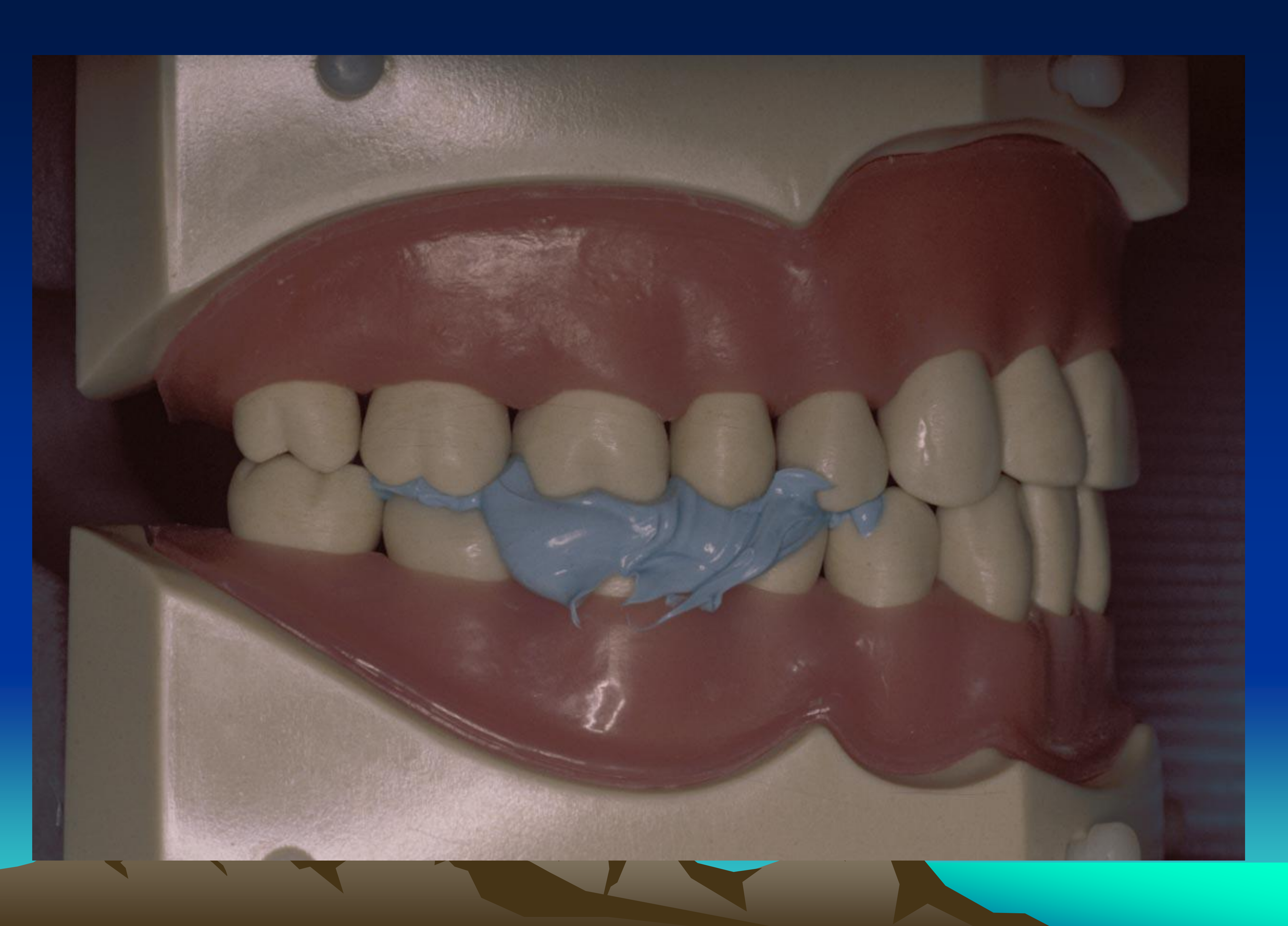
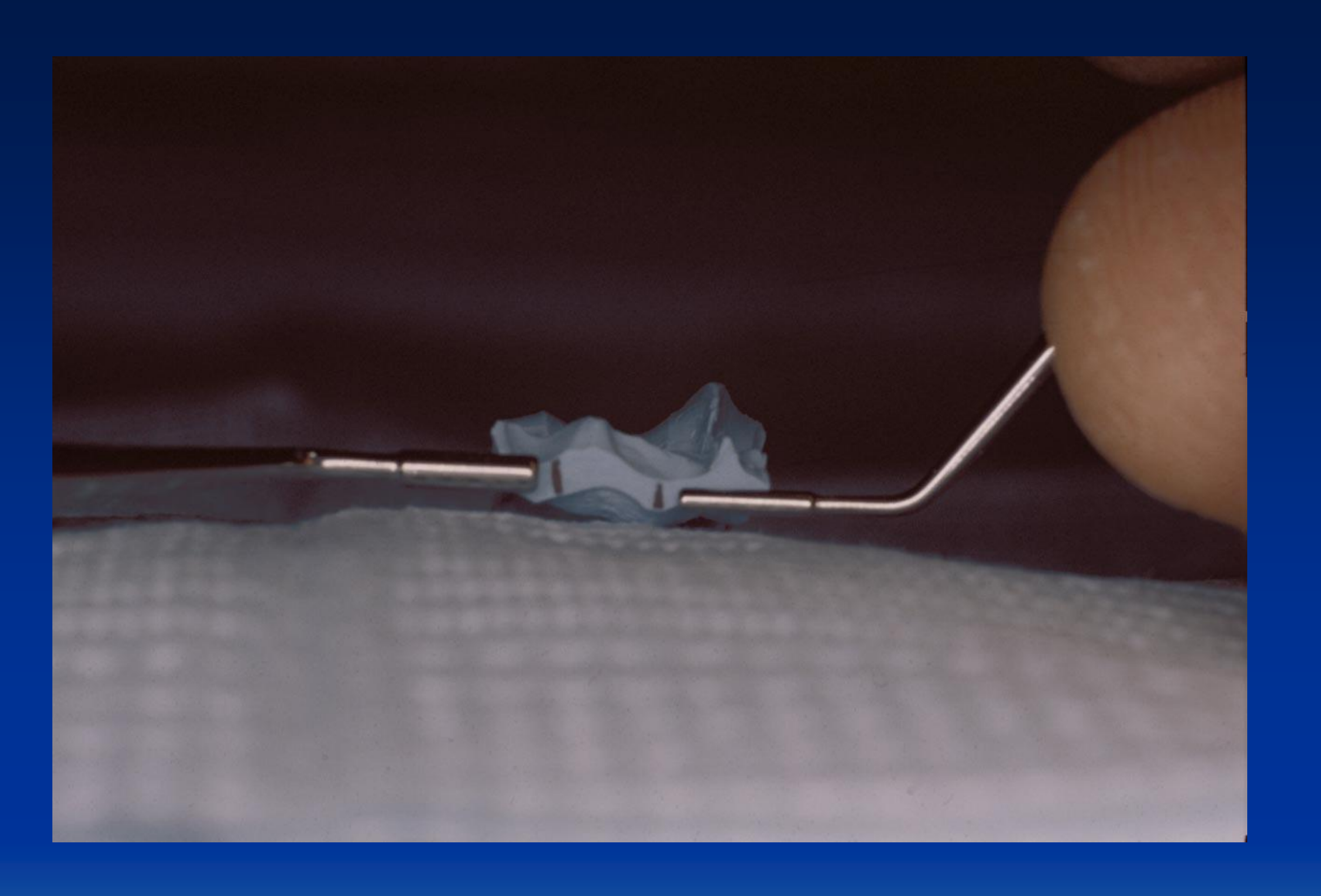


图 10-14　功能斜面的预备





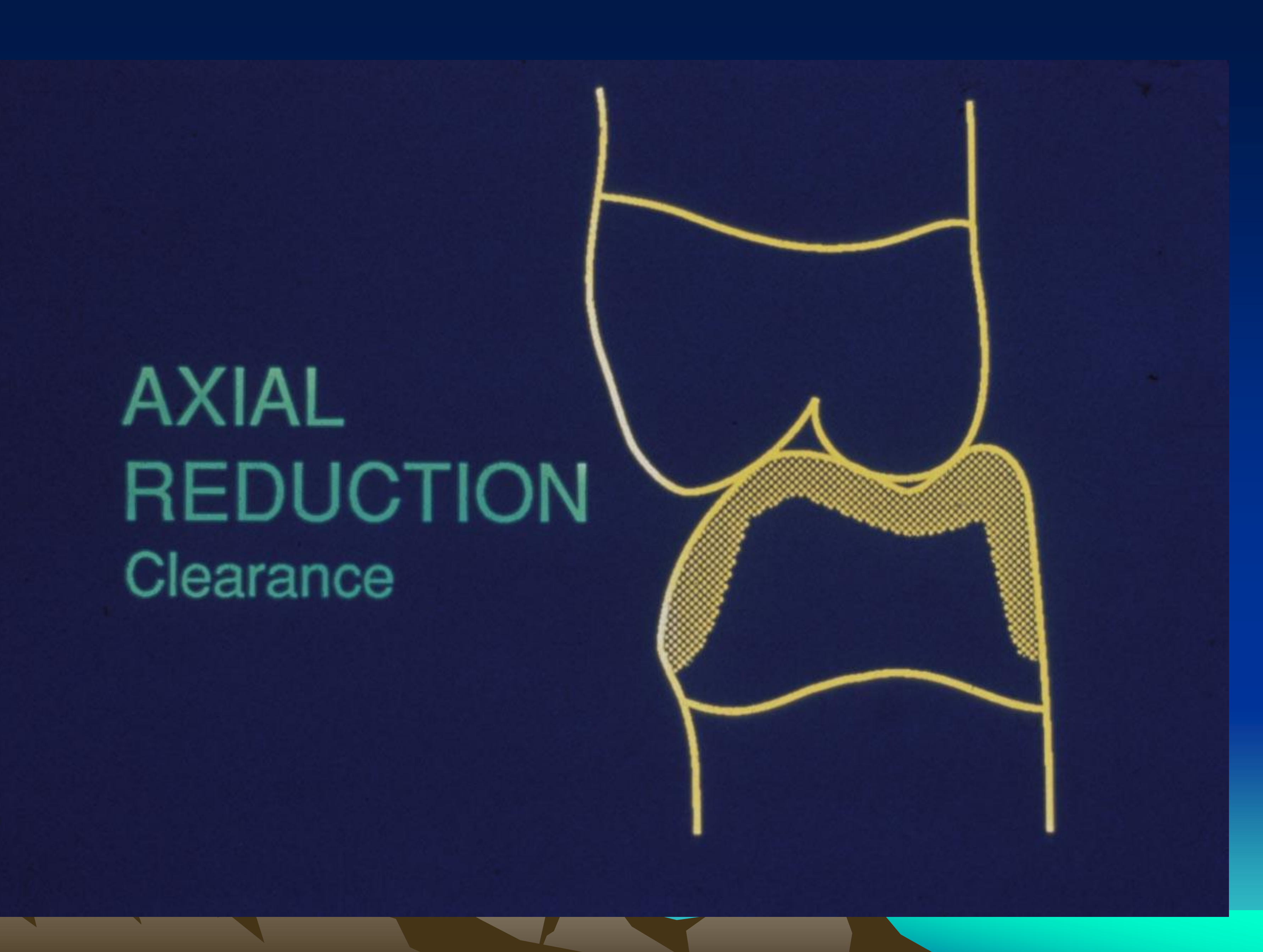


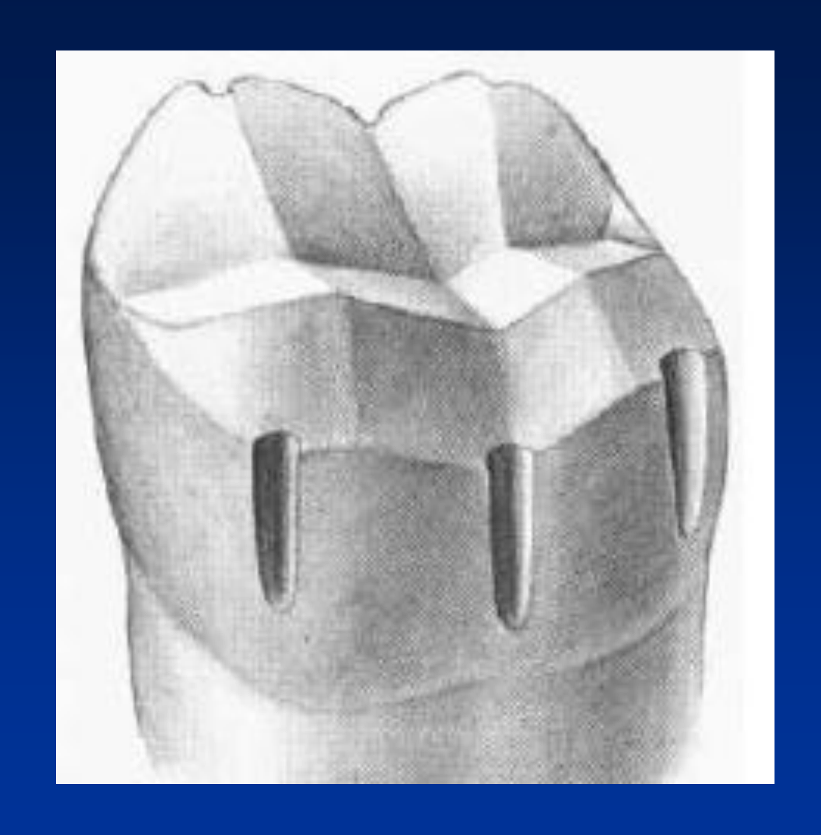
Reduction gauge

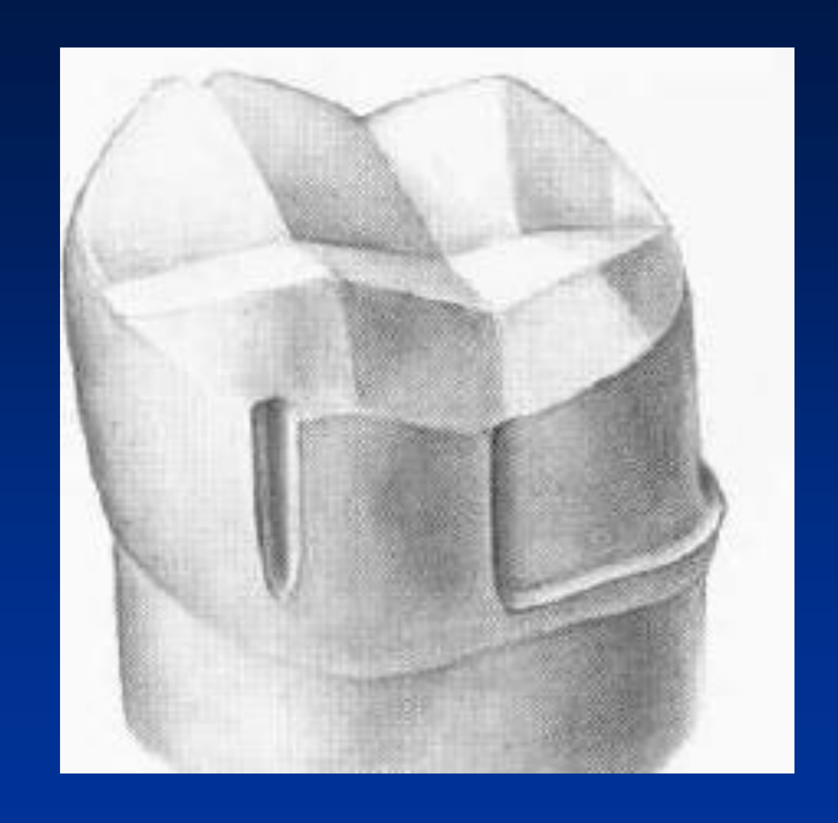

Thithiri K.
http://www.geocities.com/SoHo/Cafe/9360

Axial Reduction & Chamfer

- Axial walls at least 3 mm long
- 6-10 degree taper between opposing walls
- Chamfer depth from 0.3-0.7 mm
- Even axial depth
- Follow gingival contours
- Finish line 0.5 mm supragingival


AXIAL
REDUCTION
Clearance





Depth grooves



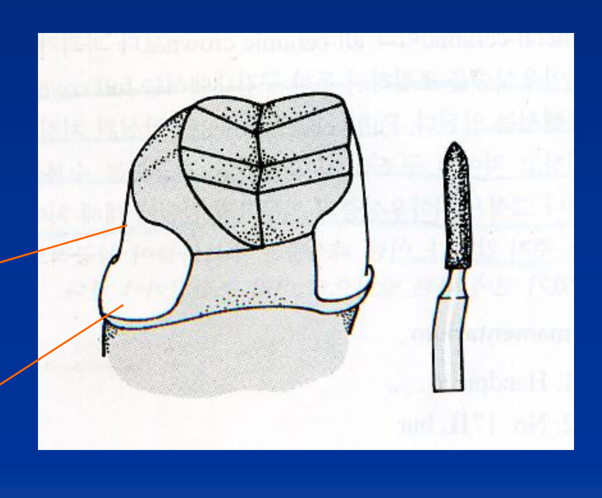


B/L wall reduction

- even finish line

0.7~1.0mm

0.3~0.5mm



Torpedo diamond

Interproximal Reduction

- Extend below adjacent tooth contact
- Avoid
  - Adjacent tooth damage
  - Overtapering
  - Excessive axial reduction

-Sufficient time must be allowed for the cutting instrument to create its own space

-If the proper cervical placement of the margin has been selected with proper axial alignment of the instrument, a lip of tooth enamel will be maintained between the diamond and the adjacent tooth



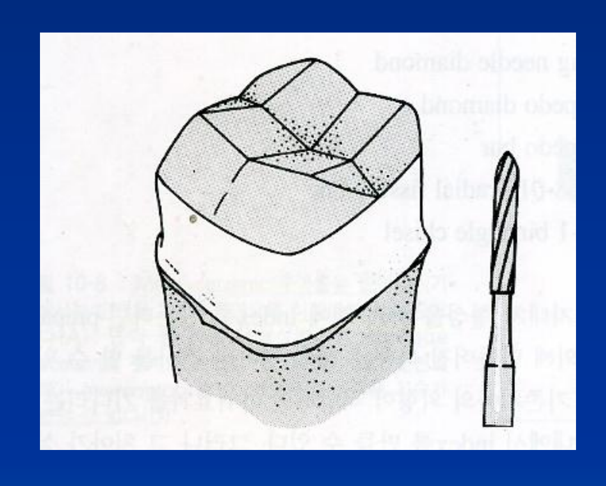






Axial finishing

- Rounding
- Torpedo bur (fissure bur)



Torpedo bur







